

**ABSTRACT**

A hydrocarbon desulfurization system that circulates fluidizable solid particles through a fluidized bed reactor, a fluidized bed regenerator, and a fluidized bed reducer to thereby provide for substantially continuous desulfurization of a hydrocarbon-containing fluid stream and substantially continuous regeneration of the solid particles. A novel transport system is employed for transporting the solid particles between the reactor, the regenerator, and the reducer. The transport system uses close-coupled vessels and gravity flow between various vessels to minimize equipment cost and particle attrition.